

Amendments to Claims

Claims 1-16. (Cancelled).

17. (Currently Amended) A modular system, comprising:  
    instrument bay for holding a set of modules that  
    plug into the instrument bay each module capable of  
communication via a set of network communication links  
contained in the instrument bay and each module having a  
clock and means for synchronizing the clock in response  
to messages on the network communication links ~~link~~ and  
each module performing a function ~~of the system~~ such that  
the functions are coordinated by a synchronized time in  
the clocks;

        at least one communication device contained in the  
instrument bay that enables communication among the  
modules via the network communication links wherein the  
communication device is selected in response to a  
physical placement of the modules in the system.

18. (Currently Amended) The modular system of claim 17,  
wherein the communication device is a communication hub  
for the network communication links to the modules.

19. (Currently Amended) The modular system of claim 17,  
wherein the communication device is a communication  
repeater for the network communication links to the  
modules.

20. (Currently Amended) The modular system of claim 17,  
wherein the communication device is a communication  
switch for the network communication links to the  
modules.

21. (Currently Amended) The modular system of claim 17,

wherein one or more of the modules includes means for applying a stimulus in response to the synchronized time.

22. (Currently Amended) The modular system of claim 17, wherein one or more of the modules include means for obtaining a measurement and for generating a time-stamp for the measurement using the synchronized time.

23. (Currently Amended) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a measurement at a given time using the synchronized time.

24. (Cancelled) The system of claim 17, wherein one or more of the modules are connected to separate sub-nets of a communication network via a corresponding communication device.

25. (Currently Amended) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links that includes an identification of a measurement and a time at which the measurement is to be obtained.

26. (Currently Amended) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links that includes an identification of a stimulus and a time at which the stimulus is to be applied.

27. (Currently Amended) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links that includes an identification of a measurement and a time interval during which a series of the measurements

are to be obtained.

28. (Currently Amended) The modular system of claim 17, wherein one or more of the modules includes means for obtaining a message via the network communication links that includes an identification of a stimulus and a time interval during which the stimulus is to be applied.

29. (Currently Amended) The modular system of claim 17, wherein one or more of the modules includes means for transferring a message via the network communication links that includes a measurement and a time at which the measurement was obtained.

30. (Currently Amended) A method for coordinating a set of functions in a modular system, comprising:

coupling each of a set of modules of the modular system to a set of network communication links in an instrument bay;

selecting at least one communication device for providing communication among the modules in response to a physical placement of the modules and placing the communication device in the instrument bay;

synchronizing a clock in each module using messages carried on the network communication links link;

performing a function of the modular system in each module such that the functions are coordinated by a synchronized time in the clocks.

31. (Previously Presented) The method of claim 30, wherein performing a function includes applying a stimulus in response to the synchronized time.

32. (Previously Presented) The method of claim 30, wherein performing a function includes obtaining a

measurement and generating a time-stamp for the measurement using the synchronized time.

33. (Previously Presented) The method of claim 30, wherein performing a function includes obtaining a measurement at a given time using the synchronized time.

34. (Cancelled) The method of claim 30, wherein selecting a communication device includes coupling the modules to separate sub-nets of a communication network via a corresponding communication device.

35. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a measurement and a time at which the measurement is to be obtained.

36. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a stimulus and a time at which the stimulus is to be applied.

37. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a measurement and a time interval during which a series of the measurements are to be obtained.

38. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes an identification of a stimulus and a time interval during which the stimulus is to be applied.

39. (Previously Presented) The method of claim 30, further comprising transferring a message via the communication device that includes a measurement and a time at which the measurement was obtained.

40. (New) A modular system, comprising:

first instrument bay for holding a set of modules each module capable of communication via a set of network communication links contained in the first instrument bay and each module having a clock and means for synchronizing the clock in response to messages on the network communication links and each module performing a function such that the functions are coordinated by a synchronized time in the clocks, the first instrument bay holding a communication device that enables communication among the modules via the network communication links and that enables communication via a communication network;

second instrument bay for holding a set of modules each module capable of communication via a set of network communication links contained in the second instrument bay and each module having a clock and means for synchronizing the clock in response to messages on the network communication links and each module performing a function such that the functions are coordinated by a synchronized time in the clocks, the second instrument bay holding a communication device that enables communication among the modules via the network communication links and that enables communication via the communication network.

41. (New) The modular system of claim 41, wherein the modules in the first and second instrument bays exchange messages for synchronizing the clocks via the communication network.

42. (New) The modular system of claim 41, wherein the modules in the first and second instrument bays exchange messages pertaining to the functions via the communication network.

43. (New) The modular system of claim 41, wherein the communication devices in the first and second instrument bays are coupled to a sub-net of the communication network.